REFERENCES 85

[111] J. Cabrera Arteaga, P. Laperdrix, M. Monperrus, and B. Baudry, "Multi-Variant Execution at the Edge," arXiv e-prints, p. arXiv:2108.08125, Aug. 2021.

- [112] J. Lettner, D. Song, T. Park, P. Larsen, S. Volckaert, and M. Franz, "Partisan: fast and flexible sanitization via run-time partitioning," in *International Symposium on Research in Attacks, Intrusions, and Defenses*, pp. 403–422, Springer, 2018.
- [113] B. G. Ryder, "Constructing the call graph of a program," *IEEE Transactions on Software Engineering*, no. 3, pp. 216–226, 1979.
- [114] E. Johnson, D. Thien, Y. Alhessi, S. Narayan, F. Brown, S. Lerner, T. McMullen, S. Savage, and D. Stefan, "Sfi safety for native-compiled wasm," NDSS. Internet Society, 2021.
- [115] J. Cabrera-Arteaga, N. Fitzgerald, M. Monperrus, and B. Baudry, "WASM-MUTATE: Fast and Effective Binary Diversification for WebAssembly," *arXiv e-prints*, p. arXiv:2309.07638, Sept. 2023.
- [116] M. Willsey, C. Nandi, Y. R. Wang, O. Flatt, Z. Tatlock, and P. Panchekha, "Egg: Fast and extensible equality saturation," *Proc. ACM Program. Lang.*, vol. 5, jan 2021.
- [117] D. Cao, R. Kunkel, C. Nandi, M. Willsey, Z. Tatlock, and N. Polikarpova, "Babble: Learning better abstractions with e-graphs and anti-unification," *Proc. ACM Program. Lang.*, vol. 7, jan 2023.
- [118] R. Tate, M. Stepp, Z. Tatlock, and S. Lerner, "Equality saturation: A new approach to optimization," in *Proceedings of the 36th Annual ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages*, POPL '09, (New York, NY, USA), p. 264–276, Association for Computing Machinery, 2009.
- [119] T. D. Morgan and J. W. Morgan, "Web timing attacks made practical," *Black Hat*, 2015.
- [120] T. Schnitzler, K. Kohls, E. Bitsikas, and C. Pöpper, "Hope of delivery: Extracting user locations from mobile instant messengers," in 30th Annual Network and Distributed System Security Symposium, NDSS 2023, San Diego, California, USA, February 27 March 3, 2023, The Internet Society, 2023.
- [121] Kaspersky, "The state of cryptojacking in the first three quarters of 2022," 2022.
- [122] Mozilla, "Protections Against Fingerprinting and Cryptocurrency Mining Available in Firefox Nightly and Beta," 2019.

86 REFERENCES

[123] J. Cabrera-Arteaga, M. Monperrus, T. Toady, and B. Baudry, "Webassembly diversification for malware evasion," *Computers & Security*, vol. 131, p. 103296, 2023.

- [124] P. Kocher, J. Horn, A. Fogh, D. Genkin, D. Gruss, W. Haas, M. Hamburg, M. Lipp, S. Mangard, T. Prescher, M. Schwarz, and Y. Yarom, "Spectre attacks: Exploiting speculative execution," in 2019 IEEE Symposium on Security and Privacy (SP), pp. 1–19, 2019.
- [125] M. Schwarz, C. Maurice, D. Gruss, and S. Mangard, "Fantastic timers and where to find them: High-resolution microarchitectural attacks in javascript," in *Financial Cryptography and Data Security* (A. Kiayias, ed.), (Cham), pp. 247–267, Springer International Publishing, 2017.
- [126] G. J. Duck, X. Gao, and A. Roychoudhury, "Binary rewriting without control flow recovery," in *Proceedings of the 41st ACM SIGPLAN Conference on Programming Language Design and Implementation*, PLDI 2020, (New York, NY, USA), p. 151–163, Association for Computing Machinery, 2020.
- [127] J. Wang, B. Chen, L. Wei, and Y. Liu, "Skyfire: Data-driven seed generation for fuzzing," in 2017 IEEE Symposium on Security and Privacy (SP), pp. 579–594, 2017.

${f Part~II}$ Included papers